1. Construct the lowest-degree polynomial given the zeros below. Then, choose the intervals that contain the coefficients of the polynomial in the form $ax^3 + bx^2 + cx + d$.

$$\frac{-4}{3}, \frac{4}{5}, \text{ and } \frac{6}{5}$$

A. $a \in [70, 77], b \in [-53, -41], c \in [-130, -119],$ and $d \in [86, 98]$

B. $a \in [70, 77], b \in [50, 55], c \in [-130, -119],$ and $d \in [-100, -88]$

C. $a \in [70, 77], b \in [-53, -41], c \in [-130, -119],$ and $d \in [-100, -88]$

D. $a \in [70, 77], b \in [-251, -249], c \in [271, 273],$ and $d \in [-100, -88]$

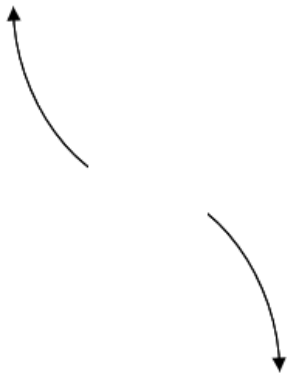
E. $a \in [70, 77], b \in [-131, -126], c \in [-33, -27],$ and $d \in [86, 98]$

---

2. Describe the end behavior of the polynomial below.

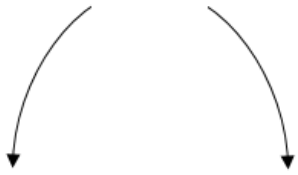
$$f(x) = 5(x-7)^4(x+7)^5(x-4)^3(x+4)^3$$

A.

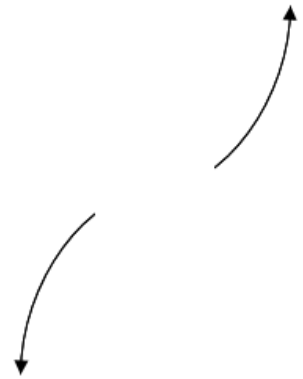


C.

B.



D.



E. None of the above.

---

3. Construct the lowest-degree polynomial given the zeros below. Then, choose the intervals that contain the coefficients of the polynomial in the form $x^3 + bx^2 + cx + d$.

$$-2 + 4i \text{ and } 1$$

A. $b \in [0.7, 1.4], c \in [-6, -3],$ and $d \in [2, 11]$

B. $b \in [0.7, 1.4], c \in [-1, 5],$ and $d \in [-9, 0]$

C. $b \in [-6.9, -1.6], c \in [14, 23],$ and $d \in [13, 26]$

D. $b \in [1.6, 6.2], c \in [14, 23],$ and $d \in [-25, -14]$

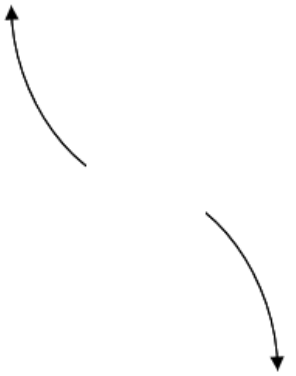
E. None of the above.

---

4. Describe the end behavior of the polynomial below.

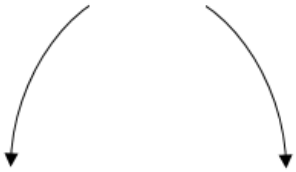
$$f(x) = -4(x-4)^5(x+4)^{10}(x+6)^3(x-6)^5$$

A.

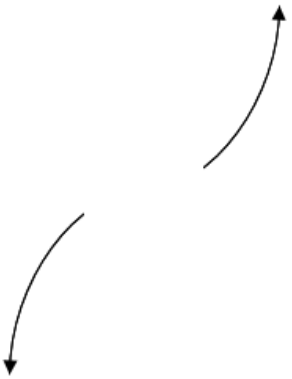


C.

B.



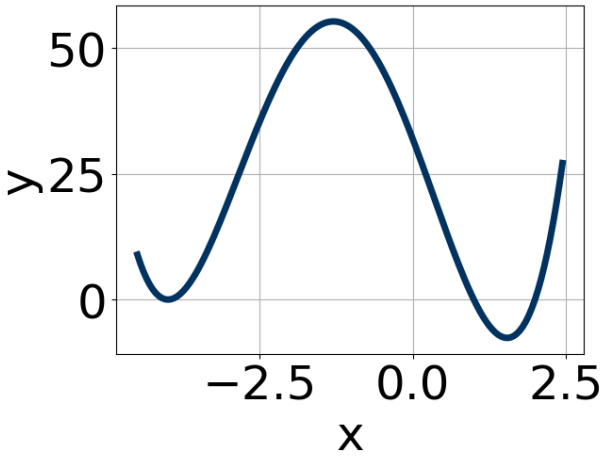
D.



E. None of the above.

---

5. Which of the following equations *could* be of the graph presented below?



A. $10(x+4)^6(x-1)^{11}(x-2)^5$

B. $10(x+4)^8(x-1)^{10}(x-2)^5$

C. $-12(x+4)^4(x-1)^5(x-2)^8$

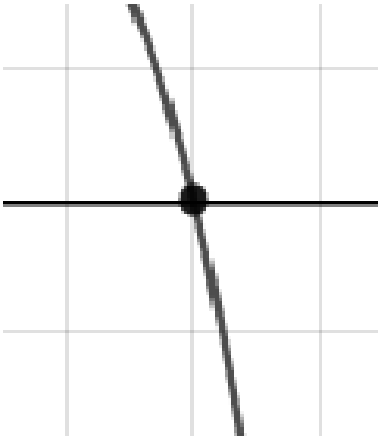
D. $-6(x+4)^{10}(x-1)^{11}(x-2)^{11}$

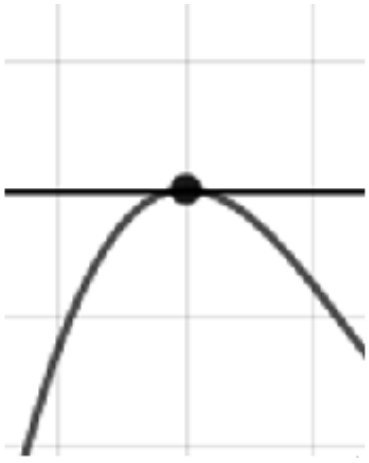
E. $17(x+4)^7(x-1)^{10}(x-2)^5$

---

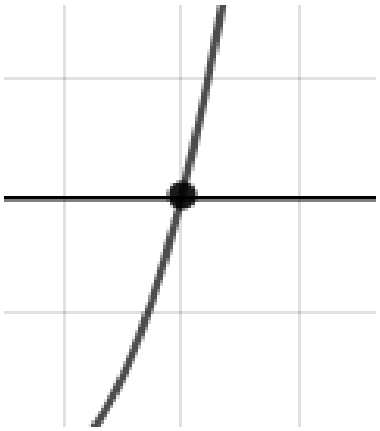
6. Describe the zero behavior of the zero $x=-5$ of the polynomial below.

$$f(x) = -9(x-5)^2(x+5)^7(x+7)^8(x-7)^{10}$$

A. 

B. 

C. 

D. 

E. None of the above.

---

7. Construct the lowest-degree polynomial given the zeros below. Then, choose the intervals that contain the coefficients of the polynomial in the form $x^3 + bx^2 + cx + d$.

$$-2 - 3i \text{ and } 2$$

A. $b \in [-2.71, -1.5], c \in [3.3, 9.2],$ and $d \in [22.8, 26.7]$

B. $b \in [1.42, 2.12], c \in [3.3, 9.2],$ and $d \in [-26.6, -24.8]$

C. $b \in [0.14, 1.15], c \in [0.2, 1.1],$ and $d \in [-7.3, -4.4]$

D. $b \in [0.14, 1.15], c \in [-3.6, 0.6],$ and $d \in [-4.4, -1.3]$

E. None of the above.

---

8. Construct the lowest-degree polynomial given the zeros below. Then, choose the intervals that contain the coefficients of the polynomial in the form $ax^3 + bx^2 + cx + d$.

$$\frac{-1}{4}, 7, \text{ and } \frac{7}{5}$$

A. $a \in [18, 22], b \in [-170, -159], c \in [152, 163],$ and $d \in [42, 51]$

B. $a \in [18, 22], b \in [106, 113], c \in [-227, -221],$ and $d \in [42, 51]$

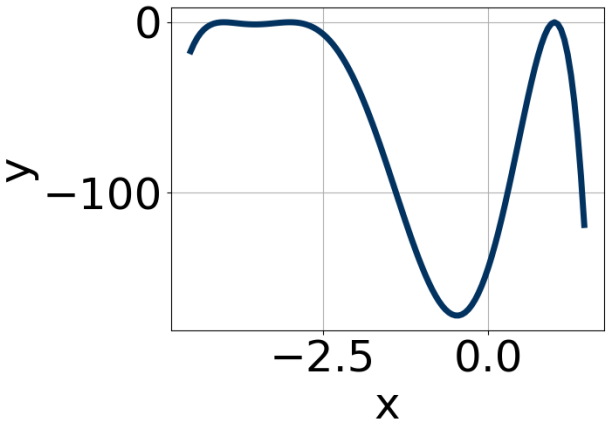
C. $a \in [18, 22], b \in [-178, -171], c \in [231, 239],$ and $d \in [-53, -47]$

D. $a \in [18, 22], b \in [159, 164], c \in [152, 163],$ and $d \in [-53, -47]$

E. $a \in [18, 22], b \in [-170, -159], c \in [152, 163],$ and $d \in [-53, -47]$

---

9. Which of the following equations *could* be of the graph presented below?



A. $-20(x+4)^{10}(x+3)^{5}(x-1)^{7}$

B. $9(x+4)^{8}(x+3)^{8}(x-1)^{9}$

C. $10(x+4)^{4}(x+3)^{10}(x-1)^{6}$

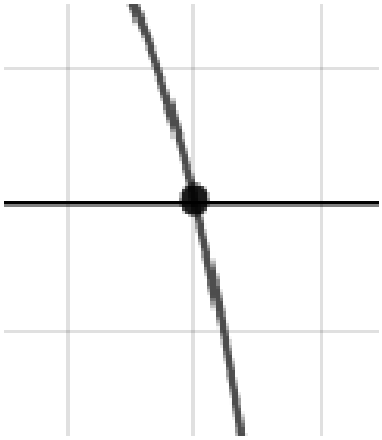
D. $-3(x+4)^{6}(x+3)^{6}(x-1)^{8}$

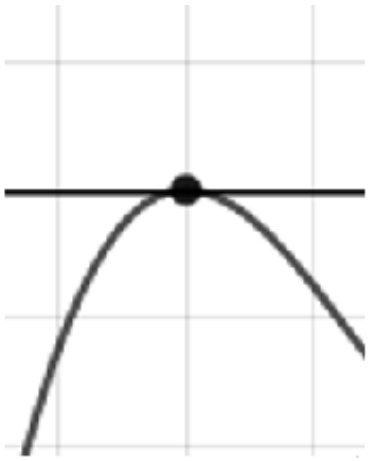
E. $-16(x+4)^{6}(x+3)^{4}(x-1)^{5}$

---

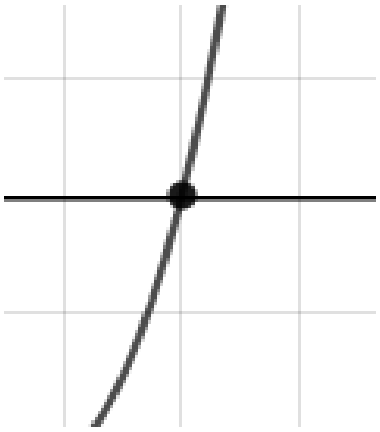
10. Describe the zero behavior of the zero $x = 7$ of the polynomial below.

$$f(x) = -7(x+7)^{5}(x-7)^{10}(x-4)^{4}(x+4)^{7}$$

A. 

B. 

C. 

D. 

E. None of the above.
